Creative Enzymes®

Native Microorganism Glucose Dehydrogenase (NAD(P)-dependent)

Cat. No. DIA-191

Lot. No. (See product label)

Introduction

Description	In enzymology, a glucose 1-dehydrogenase (EC 1.1.1.47) is an enzyme that catalyzes the chemical reaction: beta-D-glucose + NAD(P)+ ↔ D-glucono-1,5-lactone + NAD(P)H + H+. The 3 substrates of this enzyme are beta-D-glucose, NAD+, and NADP+, whereas its 4 products are D-glucono-1,5-lactone, NADH, NADPH, and H+. This enzyme belongs to the family of oxidoreductases, specifically those acting on the CH-OH group of donor with NAD+ or NADP+ as acceptor.
Applications	This enzyme is useful for enzymatic determination of D-Glucose.
Synonyms	Glucose Dehydrogenase; EC 1.1.1.47; beta-D-glucose: NAD(P)+ 1-oxidoreductase; D-glucose dehydrogenase (NAD(P)+)

Product Information

Source	Microorganism
Appearance	White amorphous powder, lyophilized
Form	Freeze dried powder
EC Number	EC 1.1.1.47
CAS No.	9028-53-9
Molecular Weight	approx. 101 kDa (Gel filtration)
Activity	GradeⅢ 250U/mg-solid or more
Contaminants	NADH oxidase < 1.0×10^{-3}% α-Glucosidase < 1.0×10^{-3}% Glucose-6-phosphate dehydrogenase < 1.0×10^{-3}%
Isoelectric point	4.5
pH Stability	pH 6.0-7.5 (20°C, 16hr)
Optimum pH	9
Thermal stability	45°C (15min-treatment with 50mM K-phosphate buffer, pH 7.0)
Optimum temperature	55°C
Michaelis Constant	NAD^+linked : 1.38×10^{-2}M (D-Glucose) 3.09×10^{-4}M (NAD^+), $NADP^+$linked : 1.25×10^{-2}M (D-Glucose) 4.07×10^{-5}M ($NADP^+$)
Specificity	Specific for ß-D,-Glucose or 2-Deoxy-glucose (Either NAD^+ or $NADP^+$ serves as coenzyme.)
Inhibitors	Ag^+, Hg^{2+}, Monoiodoacetate

Storage and Shipping Information

Stability	Stable at-20°C for at least one year